

TABLE A-5**Results for simultaneous equations model with 1990 lags—rural commuting zones**

(Estimated regression coefficients on patents and population subset)

Variable	Population subset									
	Inventive class (IC)		Science, engineering, and technical (SET) employment		Creative class (CC)		At least 4-year college degree (BA)			
	Coefficient estimate	p-value	Coefficient estimate	p-value	Coefficient estimate	p-value	Coefficient estimate	p-value		
Patents dependent variable										
IC	0.032	***	1.07E-03							
SET				0.054	***	9.22E-03				
CC							0.011	***	1.40E-03	
BA									0.009	***
1975–80 patent stock (PatStock)	0.134	***	4.08E-05	0.115	***	0.001	0.135	***	8.07E-06	0.114
Population density (PopDens)	0.219		0.218	0.230		0.153	0.168		0.421	0.144
Wage-rental ratio (WageRentR)	1.682		0.580	1.700		0.583	3.431		0.312	4.428
Natural amenity rank (NatAmen)	2.352		0.347	1.782		0.482	-0.110		0.968	-2.056
University research expenditures (UniResExp)	1.288	***	0.001	1.167	**	0.013	1.271	***	0.003	1.057
Location quotient for patent-intensive industries (LQPatInd)	2.605		0.496	6.420	**	0.044	8.896	***	0.002	11.997
Root mean square error (RMSE)	30.977			31.405			33.283			35.218
Chi-squared	687.393			672.053			617.968			571.639
p-value	<0.0001			<0.0001			<0.0001			<0.0001
Mean variance inflation factor (VIF)	3.487			3.478			3.452			3.470
Population subset equation										
Patents	13.821	***	<1.00E-08	9.380	***	<1.00E-08	42.166	***	<1.00E-08	60.767
Unemployment rate (UR)	-6.210		0.588	-5.598		0.385	-45.076		0.298	-76.618
WageRentR	-188.839	***	0.002	-103.327	***	0.008	-820.848	***	0.001	-1,078.9
NatAmen	-49.557		0.315	-16.068		0.606	56.901		0.764	279.710
Crime	-6.666	***	0.006	-3.603	**	0.019	-20.033	**	0.031	-20.394
Proximity to urban center (ProxUrbCen)	-0.512	*	0.086	-0.165		0.307	-1.818	*	0.096	-1.631
LQPatInd	131.159	**	0.017	-7.672		0.826	-180.183		0.397	-684.519
RMSE	584.026			371.313			2,257.052			3,321.879
Chi-squared	990.563			908.698			791.282			746.591
p-value	<0.0001			<0.0001			<0.0001			<0.0001
Mean VIF	3.305			3.305			3.305			3.305

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.**Note(s):**

PopDens, WageRentR, UniResExp, UR, Crime, and ProxUrbCen are lagged to 1990. Structural equation estimates are based on 370 observations. Controls for Census region and Rural-Urban Continuum Code are included in each regression.

Source(s):

Authors' estimation using U.S. Patent and Trademark Office; Census Bureau, Special Tabulation (2000), 2000 Census of Population and Housing, Summary File 1 and Summary File 4, and Shapefile; Integrated Postsecondary Data System, 2000; Department of Agriculture, Economic Research Service, 1999, 2000; Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 1998.